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EXAMINER
RADTKE, MARK A

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *06 April 2009*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-58* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-58* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Remarks

1.   In response to communications filed on 6 April 2009, claim(s) 1, 13, 19, 27, 33,

42, 48, 50, 52 and 56 is/are amended per Applicant's request. Therefore, claims 1-58

are presently pending in the application, of which, claim(s) 1, 13, 19, 27, 33, 42, 48, 50

and 56 is/are presented in independent form.

2.   In light of Applicant's amendments, the objection to claim 52 is withdrawn.

Applicant's amendments have necessitated new grounds of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-4, 6-22, 23-36 and 38-58 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Blumenau (U.S. Pat. No. 6,421,711) in view of Benhase (U.S. Pat.

No. 7,421,519).

        As to claim 1, Blumenau teaches a system configured to simplify management of

a clustered storage system having a plurality of failover modes (see Abstract), the

system comprising:

a user interface system that defines a plurality of failover modes (see columns 28-31, "Graphical User Interface for Virtual Ports" and see column 34, line 60 – column 35, line 6); and

a command set implemented by the user interface system and including a command for a user to set a cluster mode where the cluster mode includes at least one of the plurality of failover modes (see column 33, lines 29-52, see cols. 34-35, spanning paragraph and see col. 11, ll. 43-55), wherein each failover mode configures the partner storage system with a world wide node name (see column 9, lines 26-32, "LUN") and a world wide port name form the selected storage system to allow the partner storage system to assume an identity of the selected storage system (see column 11, lines 3-30, "WWN").

Blumenau does not explicitly teach wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition,

wherein the partner storage system is configured to receive requests directed to the partner storage system and the selected storage system.

However, Benhase teaches wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition (see col. 2, ll. 19-28, "associating with the identifier, a World Wide Port Name of a port of a fibre channel adapter coupled to the second storage control unit, wherein the port is used for communications"),

wherein each failover mode configures the partner storage system with a world wide node name (see col. 2, ll. 19-28, "associating with the identifier, a World Wide Node Name of the second storage control unit"),

wherein the partner storage system is configured to receive requests directed to the partner storage system and the selected storage system (see col. 3, ll. 35-52, "The primary storage control unit 102 may send the I/O requests to one or more other storage units, such as, secondary storage control units 104, 106.").

Therefore, it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made to modify Blumenau by the teaching of Benhase to provide "protection from site disasters or outages" (see Benhase, col. 1, ll. 34-41).

As to claims 2, 34 and 43, Blumenau, as modified, teaches wherein the user interface system comprises a command line interface (CLI) configured to support the command set (see columns 28-31, "Graphical User Interface for Virtual Ports").

As to claims 3, 20-21 and 35, Blumenau, as modified, teaches wherein the command set further comprises an igroup command that determines whether a set of initiators may utilize data access command proxying (see columns 12-21, "Storage Volume Partitioning by Named Groups", where "initiators" is read on "hosts").

As to claims 4, 22 and 36, Blumenau, as modified, teaches wherein the set of initiators comprises at least one fibre channel world wide name (see figure 5, column

"Host Controller WWN" and see also column 13, lines 33-34, "host controller port

WWN").

As to claims 6, 38, 53 and 55, Blumenau, as modified, teaches wherein the

igroup command sets an igroup option to determine whether members of a set of

initiators may use a partner port for proxying data access command (see column 15,

lines 34-60 and see column 2, line 56 – column 3, line 18).

As to claims 7 and 11, Blumenau, as modified, teaches wherein the command

set further comprises a cfmode command that sets a cluster mode for the clustered

storage system (see column 12, line 65 – column 13, line 6).

As to claims 8, 14, 24, 28, 39 and 45, Blumenau, as modified, teaches wherein

the cluster mode enables the clustered storage system to proxy data access requests

received by a first storage system in the clustered storage system to a second storage

system in the clustered storage system (see column 15, lines 34-60 and see column 2,

line 56 – column 3, line 18 and see column 17, line 9 – column 18, line 5 and see

column 10, lines 16-51).

As to claims 9, 15, 25, 29, 40 and 46, Blumenau, as modified, teaches wherein

the cluster mode enables a first storage system in the clustered storage system to

assume an identity of a second storage system in the clustered storage system (see

column 11, lines 31-56).

        As to claims 10, 26, 41 and 47, Blumenau, as modified, teaches wherein the

cluster mode enables proxying of data access requests received by a first storage

system in the clustered storage system to a second storage system in the clustered

storage system and further enables the first storage system to assume an identity of the

second storage system (see column 15, lines 34-60 and see column 2, line 56 – column

3, line 18 and see column 17, line 9 – column 18, line 5 and see column 10, lines 16-51

and see column 11, lines 31-56).

        As to claims 12, 16-18, 30-32 and 44, Blumenau, as modified, teaches wherein

the user interface system further comprises a graphical user interface having

functionality to implement the command set (See columns 28-31, "Graphical User

Interface for Virtual Ports". The phrase "having functionality to" renders the rest of the

claim as intended use because the limitations are not positively recited. The limitation of

"to implement the command set" will not be given patentable weight, although it is

taught by Blumenau.).

        As to claim 13, Blumenau teaches a method for simplifying management of a

clustered storage system having a plurality of failover modes (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 7 above.

As to claim 19, <u>Blumenau</u> teaches a system adapted to simplify management of

a clustered storage system having a plurality of failover modes (see Abstract), the

system comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 2 above.

As to claim 27, <u>Blumenau</u> teaches a computer readable medium, including

program instructions executing on a computer, for simplifying management of a

clustered storage system having a plurality of failover modes (see Abstract), the

computer readable medium including instructions for performing the steps of:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 7 above.

As to claim 33, <u>Blumenau</u> teaches a system (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks

and discussions made in claim 1 above.

As to claim 42, <u>Blumenau</u> teaches a method (see Abstract), comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 13 above.

As to claim 48, <u>Blumenau</u> teaches a system configured to simplify management of a clustered storage system having a plurality of failover modes (see Abstract), the system comprising:

For the remaining steps of this claim applicant(s) is/are directed to the remarks and discussions made in claim 1 above.

As to claims 49 and 51, <u>Blumenau</u>, as modified, teaches wherein the plurality of failover modes comprises a standby mode, a partner mode, a dual fabric mode, and a mixed mode (see col. 8, ll. 24-45, "Fibre Channel", "dual-redundant paths").

As to claim 50, <u>Blumenau</u>, as modified, teaches a system (see Abstract), comprising:

a first server configured with one or more ports to send and receive messages from one or more clients and the first server connected to a first set of storage devices and a second set of storage devices, wherein the first server is configured to own the first set of storage devices; and

a second server configured with one or more ports to send and receive messages from one or more clients and the second server connected to the first set of storage devices and the second set of storage devices, wherein the second server is

configured to own the second set of storage devices (see Blumenau, col. 31, particularly

ll. 40-43 and see Abstract, "For convenient partitioning of storage among host

processors, one or more virtual ports are assigned to each host, and a set of storage

volumes are made accessible from each virtual port." and see figure 4, Hosts 22-25).

For the remaining limitations of this claim, Applicant is directed to Examiner's

comments regarding claim 1.

As to claim 52, Blumenau, as modified, teaches wherein the STANDBY mode

utilizes standby ports on the first server to allow a second port on the second server to

receive and handle data access requests directed to the first server (see col. 8, ll. 24-

45, "Therefore, if there is a single failure of any one of the loops or a single failure of any

one of the port adapters, there will still be an operational path from each host to the

internal back-plane busses (33, 34 in FIG. 1) in the cached disk storage subsystem.").

As to claims 54 and 57, Blumenau, as modified, teaches wherein the

DUAL_FABRIC mode utilizes one or more virtual ports on the second server to emulate

additional active ports for clients (see Abstract, "shared volume").

As to claim 56, Blumenau teaches a system (see Abstract), comprising:

For the remaining limitations of this claim, Applicant is directed to Examiner's

comments regarding claim 1 and its dependents.

As to claim 58, <u>Blumenau</u>, as modified, teaches wherein the second port on the second server is a physical port (see column 9, lines 26-32).

5.   Claims 5, 23 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Blumenau</u>, as modified, as applied to claims 3, 21 and 35, further in view of <u>Clark</u> ("IP SANs: A Guide to iSCSI, iFCP, and FCIP Protocols for Storage Area Networks", Published 26 November 2001, Section 8.5, "Internet SCSI").

As to claims 5, 23 and 37, <u>Blumenau</u>, as modified, teaches wherein the set of initiators comprises one or more identifiers (see columns 9-11, "WWN").

<u>Blumenau</u>, as modified, still does not explicitly teach wherein the identifiers are iSCSI identifiers.

<u>Clark</u> teaches wherein the identifiers are iSCSI identifiers (see pages 2-4, "iSCSI Address and Naming Conventions").

Therefore, it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made to have further modified <u>Blumenau</u>, as modified, by the teaching of <u>Clark</u> because iSCSI is a well-known alternative to Fibre Channel technology and "the iSCSI specification allows for a lower functional level on top of IP to provide services such as IPSec data encryption" (see page 2, section 8.5.2, paragraph 2).

Response to Arguments

6.   Applicant's arguments filed on 6 April 2009 with respect to the rejected claims in view of the cited references have been fully considered but are moot in view of the new grounds for rejection.

Additional References

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to storage system partnering in general:

Doc. No.	Assigned to
US 6813698 B2	Gallo; Frank David et al.
US 6895461 B1	Thompson; David Patrick
US 6988149 B2	Odenwald; Louis H.
US 7124169 B2	Shimozono; Norio et al.
US 7165258 B1	Kuik; Timothy J. et al.
US 7188194 B1	Kuik; Timothy J. et al.
US 7249227 B1	Pittman; Joseph C.
US 7260737 B1	Lent; Arthur F. et al.
US 7269131 B2	Cashman; Paul Nicholas et al.
US 7274673 B2	Beer; Reginald et al.
US 7281062 B1	Kuik; Timothy J. et al.
US 7290086 B2	Beardsley; Brent C. et al.

US 7370078 B1	Woodruff; Roger
US 7398415 B2	Beer; Reginald et al.
US 7467191 B1	Wang; Fang et al.
US 7487381 B1	Beaman; Rebecca et al.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9.   Any inquiry concerning this communication or earlier communications should be directed to the examiner, Mark A. Radtke. The examiner's telephone number is (571) 272-7163, and the examiner can normally be reached between 9 AM and 5 PM, Monday through Friday.

If attempts to contact the examiner are unsuccessful, the examiner's supervisor,

Neveen Abel-Jalil, can be reached at (571) 272-4074.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to Customer Service at (800) 786-9199.

maxr
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July 17, 2009

/Neveen Abel-Jalil/
Supervisory Patent Examiner, Art Unit 2165